

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NOx occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NOx in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NOx with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NOx in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NOx occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SOx at the time of combustion is supplied to the engine to solidify the SOx in the exhaust gas thereby to prevent the SOx in the exhaust gas from being occluded by the NOx occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the condition of the atmosphere at said catalyst as detected by a sensor disposed in the exhaust gas passage downstream from the NOx occluding and reducing catalyst.

2. (Original) A method of purifying exhaust gas of an internal combustion engine as set forth in claim 1, wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when the condition of the atmosphere at said NO_x occluding and reducing catalyst is one for suppressing the occlusion of SO_x by the NO_x occluding and reducing catalyst.

3. (Original) A method of purifying exhaust gas of an internal combustion engine as set forth in claim 1, wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when the condition of the atmosphere of said NO_x occluding and reducing catalyst is one for promoting the SO_x occluded by the NO_x occluding and reducing catalyst to be released from the NO_x occluding and reducing catalyst.

4. (Canceled)

5. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NO_x occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NO_x in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NO_x with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NO_x in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NO_x occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SO_x at the time of combustion is supplied to the engine to solidify the SO_x in the

exhaust gas thereby to prevent the SO_x in the exhaust gas from being occluded by the NO_x occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the operating condition of the engine, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when said internal combustion engine is operated under a condition of suppressing the occlusion of SO_x by the NO_x occluding and reducing catalyst.

6. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NO_x occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NO_x in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NO_x with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NO_x in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NO_x occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SO_x at the time of combustion is supplied to the engine to solidify the SO_x in the exhaust gas thereby to prevent the SO_x in the exhaust gas from being occluded by the NO_x occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the operating condition of the engine, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when said internal combustion engine is operated under a condition

of promoting the SOx occluded by the NOx occluding and reducing catalyst to be released from the NOx occluding and reducing catalyst.

7. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NOx occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NOx in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NOx with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NOx in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NOx occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SOx at the time of combustion is supplied to the engine to solidify the SOx in the exhaust gas thereby to prevent the SOx in the exhaust gas from being occluded by the NOx occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the operating condition of the engine, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when said internal combustion engine is operated under a condition of promoting the formation of deposit in the engine due to said sulfur-solidifying agent.

8. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NO_x occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NO_x in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NO_x with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NO_x in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NO_x occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SO_x at the time of combustion is supplied to the engine to solidify the SO_x in the exhaust gas thereby to prevent the SO_x in the exhaust gas from being occluded by the NO_x occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the operating condition of the engine, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when said internal combustion engine is operated under a condition of promoting the occurrence of knocking due to the addition of said sulfur-solidifying agent.

9. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NO_x occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NO_x in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas

flowing in is lean, and to reduce the occluded NOx with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NOx in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NOx occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SOx at the time of combustion is supplied to the engine to solidify the SOx in the exhaust gas thereby to prevent the SOx in the exhaust gas from being occluded by the NOx occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the operating condition of the engine, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when the knocking has occurred in said internal combustion engine.

10. (Original) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NOx occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NOx in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NOx with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NOx in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NOx occluded by said

catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SO_x at the time of combustion is supplied to the engine to solidify the SO_x in the exhaust gas thereby to prevent the SO_x in the exhaust gas from being occluded by the NO_x occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the NO_x occluding capability of said NO_x occluding and reducing catalyst.

11. (Original) A method of purifying exhaust gas of an internal combustion engine as set forth in claim 10, wherein when the NO_x occluding capability of said NO_x occluding and reducing catalyst becomes lower than a predetermined value, said sulfur-solidifying agent is supplied to the engine in an increased amount or the supply thereof is started.

12. (Previously Presented) The method of purifying exhaust gas of an internal combustion engine as set forth in claim 10, wherein the NO_x occluding capability of the NO_x occluding and reducing catalyst is detected by a sensor.

13. (Canceled)

14. (Canceled)

15. (Previously Presented) The method of purifying exhaust gas of an internal combustion engine as set forth in claim 1, wherein the sensor detects an air-fuel ratio of the exhaust gas based on the oxygen concentration in the exhaust gas.

16. (Previously Presented) The method of purifying exhaust gas of an internal combustion engine as set forth in claim 1, wherein the sensor detects an exhaust gas temperature.

17. (Previously Presented) The method of purifying exhaust gas of an internal combustion engine as set forth in claim 1, wherein the sensor detects the NO_x concentration of the exhaust gas.

18. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NO_x occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NO_x in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NO_x with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NO_x in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NO_x occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SO_x at the time of combustion is supplied to the engine to solidify the SO_x in the exhaust gas thereby to prevent the SO_x in the exhaust gas from being occluded by the NO_x occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the condition of the atmosphere at said catalyst, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when the condition of the atmosphere at said NO_x occluding and reducing catalyst is one for suppressing the occlusion of SO_x by the NO_x occluding and reducing catalyst.

19. (Previously Presented) A method of purifying exhaust gas of an internal combustion engine comprising steps of:

disposing a NOx occluding and reducing catalyst in an exhaust gas passage of the internal combustion engine to selectively occlude and hold NOx in the exhaust gas by adsorption, by absorption or by both of them when the air-fuel ratio of the exhaust gas flowing in is lean, and to reduce the occluded NOx with reducing components in the exhaust gas when the air-fuel ratio of the exhaust gas flowing in becomes the stoichiometric air-fuel ratio or a rich air-fuel ratio; and

causing said catalyst to occlude the NOx in the exhaust gas from the engine when the engine is operated at a lean air-fuel ratio, and purifying the NOx occluded by said catalyst by reduction with reducing components in the exhaust gas from said engine when the engine is operated at the stoichiometric air-fuel ratio or at the rich air-fuel ratio;

wherein a sulfur-solidifying agent that forms a solid sulfate upon the reaction with SOx at the time of combustion is supplied to the engine to solidify the SOx in the exhaust gas thereby to prevent the SOx in the exhaust gas from being occluded by the NOx occluding and reducing catalyst, and the amount of supplying said sulfur-solidifying agent to the engine is controlled depending upon the condition of the atmosphere at said catalyst, and

wherein said sulfur-solidifying agent is supplied to the engine in a decreased amount or is not supplied when the condition of the atmosphere of said NOx occluding and reducing catalyst is one for promoting the SOx occluded by the NOx occluding and reducing catalyst to be released from the NOx occluding and reducing catalyst.